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Design of MIDI Audio Synthesizer Module for Musical Applications

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Design of MIDI Audio Synthesizer Module for Musical Applications

Final Project Report

12/07/2012

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ABSTRACT

The introduction of the Musical Instrument Digital Interface (MIDI) specification revolutionized the way music is now recorded. Currently, there is a wealth of MIDI capable devices on the market, however they are not all in the price range of the occasional user. With the emphasis on more and greater capabilities, there has been left a gap in the product range for a low priced MIDI controlled synthesizer for the average user. This project attempted to find a feasible alternative to the high-end analog synthesizers by creating a new design with simpler circuitry that could still perform the most used functions needed by the target audience. This report will describe the steps taken, components used, and tests that were conducted to show that an alternative product is feasible.

Keywords:

MIDI, Music, Audio, Interface, DAC, Digital-to-Analog, Op-amp, Amplifier, Amplification, Signal Processing, Filtering, VCO, Voltage Controlled, Oscillator, Band Pass Filter, Low Pass Filter, Audio Filter, Frequency, Cutoff, Q Value, Attenuation

TABLE OF CONTENTS

LIST OF ILLUSTRATIONS.....6

LIST OF TABLES8

CHAPTER 1. INTRODUCTION.....9

 PROBLEM TOPIC9

 BACKGROUND.....9

 CRITERIA10

 METHODOLOGY11

 PRIMARY PURPOSE11

 OVERVIEW.....11

CHAPTER 2. SYSTEM DESIGN OVERVIEW AND RESEARCH.....13

 FEASABILITY STUDY13

 DESIGN PROCESS.....13

 LEGAL ASPECTS.....13

 SYSTEM SCOPE.....14

CHAPTER 3. HARDWARE DESIGN15

 CIRCUIT DESIGN15

 SIMULATION RESULTS.....21

 CIRCUIT PROTOTYPES.....27

CHAPTER 4. SOFTWARE DESIGN.....34

 SOFTWARE ARCHETECTURE.....34

 PROGRAMMING LANGUAGE36

 INTEGRATED DEVELOPMENT ENVIRONMENT.....37

 MAIN COMPONENTS37

 UML DIAGRAMS.....39

TABLE OF CONTENTS (CONT.)

CHAPTER 5. UNIT TESTING AND SYSTEM INTEGRATION41

 HARDWARE TESTING AND VALIDATION.....41

 SOFTWARE TESTING AND VALIDATION57

 SYSTEM INTEGRATION, TESTING, AND VALIDATION.....58

CHAPTER 6. PROJECT MANAGEMENT59

 SCHEDULE AND TIME MANAGEMENT.....59

 RESOURCE AND COST MANAGEMENT61

 QUALITY MANAGEMENT63

 RISK MANAGEMENT63

 PROJECT PROCUREMENT64

 LESSONS LEARNED64

CHAPTER 7. CONCLUSION.....65

REFERENCES.....66

APPENDIX A. SCHEMATICS67

APPENDIX B. PARTS LIST FOR PROTOTYPE.....71

APPENDIX C. SOFTWARE CODE.....75

APPENDIX D. COMPONENT DATA SHEETS80

LIST OF ILLUSTRATIONS

Figure 1 – Top Level System Design.....	pg. 15
Figure 2 – Diagram of Synthesizer Module.....	pg. 16
Figure 3 – MIDI DAC Schematic.....	pg. 16
Figure 4 – Types of Waveforms.....	pg. 17
Figure 5 – Basic Visualization of Filter Types Using MatLab.....	pg. 18
Figure 6 – VCF and VCA Initial Design.....	pg. 19
Figure 7 – VCF and VCA Final Design.....	pg. 20
Figure 8 – Low Pass Filter Simulation.....	pg. 21
Figure 9 – Transform Function of Simulated Low Pass Filter.....	pg. 22
Figure 10 – Frequency Analysis of Simulated Low Pass Filter.....	pg. 22
Figure 11 – High Pass Filter Simulation.....	pg. 23
Figure 12 – Transform Function of Simulated High Pass Filter.....	pg. 24
Figure 13 – Frequency Analysis of Simulated High Pass Filter.....	pg. 24
Figure 14 – Band Pass Filter Simulation	pg. 25
Figure 15 – Transform Function of Simulated Band Pass Filter.....	pg. 26
Figure 16 – Frequency Analysis of Simulated Band Pass Filter.....	pg. 26
Figure 17 – MIDI DAC Prototype.....	pg. 27
Figure 18 – VCO Prototype.....	pg. 28
Figure 19 – VCF Prototype.....	pg. 29
Figure 20 – VCA Prototype.....	pg. 29
Figure 21 – VCO Sine Wave Test.....	pg. 33
Figure 22 – VCO Square Wave Test.....	pg. 33
Figure 23 – Arduino Uno R3.....	pg. 38
Figure 24 – Arduino R3 Schematics.....	pg. 39
Figure 25 – Flow Chart.....	pg. 40
Figure 26 – VCO Testing Chart.....	pg. 41
Figure 27 – Square Wave Voltage In vs Frequency Out.....	pg. 42
Figure 28 – VCO Testing at Input Voltage of 1V (1of 2).....	pg. 43
Figure 29 – VCO Testing at Input Voltage of 1V (2of 2).....	pg. 43
Figure 30 – VCO Testing at Input Voltage of 7.9V (1 of 2).....	pg. 44
Figure 31 – VCO Testing at Input Voltage of 7.9V (2 of 2).....	pg. 44
Figure 32 – Triangle Wave Voltage In vs Frequency Out.....	pg. 45
Figure 33 – VCO Testing at Input Voltage of 0.98V (1of 2).....	pg. 46
Figure 34 – VCO Testing at Input Voltage of 0.98V (2of 2).....	pg. 46
Figure 35 – VCO Testing at Input Voltage of 7.99V (1 of 2).....	pg. 47
Figure 36 – VCO Testing at Input Voltage of 7.99V (2 of 2).....	pg. 47
Figure 37 – Sine Wave Voltage In vs Frequency Out.....	pg. 48

LIST OF ILLUSTRATIONS (cont.)

Figure 38 – VCO Testing at Input Voltage of 1.0V (1of 2)	pg. 49
Figure 39 – VCO Testing at Input Voltage of 1.0V (2of 2).....	pg. 49
Figure 40 – VCO Testing at Input Voltage of 8.01V (1 of 2).....	pg. 50
Figure 41 – VCO Testing at Input Voltage of 8.01V (2 of 2).....	pg. 50
Figure 42 – Sawtooth Wave Voltage In vs Frequency Out.....	pg. 51
Figure 43 – VCO Testing at Input Voltage of 0.99V (1of 2)	pg. 52
Figure 44 – VCO Testing at Input Voltage of 0.99V (2of 2).....	pg. 52
Figure 45 – VCO Testing at Input Voltage of 8.01V (1 of 2).....	pg. 53
Figure 46 – VCO Testing at Input Voltage of 8.01V (2 of 2).....	pg. 53
Figure 47 – Low Pass Filter on Oscilloscope.....	pg. 54
Figure 48 – Fourier Transform of Low Pass Filter on Oscilloscope.....	pg. 54
Figure 49 – High Pass Filter on Oscilloscope.....	pg. 55
Figure 50 – Fourier Transform of High Pass Filter on Oscilloscope.....	pg. 55
Figure 51 – Band Pass Filter on Oscilloscope.....	pg. 56
Figure 52 – Fourier Transform of Band Pass Filter on Oscilloscope.....	pg. 56
Figure 53 – System Testing.....	pg. 58

LIST OF TABLES

Table 1 – Operational Requirements Criteria.....	pg. 9
Table 2 – Performance Requirements Criteria.....	pg. 9
Table 3 – Physical Characteristics Criteria.....	pg. 9
Table 4 – Utilization Environment Requirements Criteria.....	pg. 9
Table 5 – Functional Requirements Criteria.....	pg. 10
Table 6 – Actual vs. Stated Values of Components Table 1 of 2.....	pg. 29
Table 7 – Actual vs. Stated Values of Components Table 2 of 2.....	pg. 30
Table 8 – VCO Testing Results.....	pg. 31
Table 9 – MIDI Note Table (1 of 2).....	pg. 33
Table 10 – MIDI Note Table (2 of 2).....	pg. 34
Table 11 – Square Wave Voltage In vs Frequency Out.....	pg. 41
Table 12 – Triangle Wave Voltage In vs Voltage Out.....	pg. 44
Table 13 – Sine Wave Voltage In vs Voltage Out.....	pg. 47
Table 14 – Sawtooth Wave Voltage In vs Frequency Out.....	pg. 50
Table 15 – VCA Voltage In vs Voltage Out Testing.....	pg. 56
Table 16 – Schedule.....	pg. 58
Table 17 – Task Breakdown by Team Member.....	pg. 60
Table 18 – Component Costs.....	pg. 60
Table 19 – Non-Component Costs.....	pg. 61
Table 20 – Project Costing.....	pg. 61